

DISCUSSION OF THE AMENDMENT

New Claim 24 has been added, as supported in the specification at page 16, lines 28-36, together with the comparative data therein, particularly Example No.1 in Tables 1 and 2, at 100°C, compared to Example No. 2 in Tables 3 and 4, at 100°C, and Example No. 3 in Tables 5 and 6, at 100°C, compared to Example No. 4 in Tables 7 and 8, at 100°C, and more particularly, Example 1.1 compared to Example 2.2; Example 1.2 compared to Example 2.3; Example 1.3 compared to Example 2.4; and Example 3.1 compared to Example 4.2.

No new matter is believed to have been added by the above amendment. Claims 1, 5-15, and 22-24 are now pending in the application.

REMARKS

The rejections under 35 U.S.C. 103(a) of :

Claims 1, 5-15 and 23 as unpatentable over US 4,663,377 (Hombach et al) in view of US 6,426,414 (Laas et al) and US 4,687,813 (Lenz et al), and

Claims 1, 5, 6, 8-15 and 22-23 as unpatentable over Hombach et al in view of US 6,472,493 (Huynh-Ba) [and Lenz et al]¹,

are respectfully traversed.

As previously explained, the present claims are drawn to the disclosed embodiment wherein emulsifying compound (C1) is reacted with HDI-trimer (A) (but excluding IPDI-trimer), thereby forming emulsifier (C), which is mixed with IPDI-trimer (B). Such an embodiment is exemplified in Example 1, described in the specification beginning at page 17, line 15, wherein the reaction product of (A) and (C1) is referred to as hydrophilicized isocyanate a1. As described therein beginning at page 17, line 26, like isocyanate a1 itself, the resulting mixtures can be emulsified effectively in water by simple stirring, to produce fine emulsions, but have more rapid increases in hardness and higher ultimate hardnesses compared to isocyanate a1 alone. See Tables 1 and 2 at page 17, line 31 through page 18, line 14 of the specification, wherein Comparative, C contains isocyanate a1 alone.

Example 1 is an example of the presently-claimed embodiment wherein no solvent is used. In addition, the presently-claimed embodiment is shown to result in greater hardness, especially at higher baking temperatures, compared to the disclosed embodiment 3) herein, wherein the at least one emulsifier (C) is obtained by reacting a mixture of (A) and (B) with at least one compound (C1), which is described in the specification at page 9, lines 12-14. In other words, both polyisocyanates (A) and (B) are hydrophilicized. Data for such an

¹ That Lenz et al is not listed in the statement of the rejection is irrelevant; reliance thereon is all that is necessary. “Where a reference is relied on to support a rejection, whether or not in a ‘minor capacity,’ there would appear to be no excuse for not positively including the reference in the statement of rejection.” *In re Hoch*, 166 USPQ 406, 407 n.3 (CCPA 1970). See also MPEP 706.02(j).

embodiment are shown in Example 2, which also contains no solvent, described in the specification beginning at page 18, line 16. Data analogous to above-discussed Tables 1 and 2 are in Tables 3 and 4, respectively, at page 18, line 35 through page 19, line 13 of the specification. Applicable comparisons, i.e., same relative amounts of isocyanate components, are between Example 1.1 with Example 2.2; Example 1.2 with Example 2.3; and Example 1.3 with Example 2.4.

When a solvent is present, applicable comparisons are between Example 3.1, which is described under Example 3, beginning in the specification at page 19, line 18, the composition of which is shown in Table 5, and which is according to the presently-claimed embodiment, and Example 4.2, described in the specification under Example 4, beginning at page 20, line 18, the composition of which is shown in Table 7. Compare the hardness data in Table 6 with the data in Table 8.

New Claim 24 limits the claimed composition to compositions meeting, in effect, the above-discussed hardness improvement.

In its broadest terms, Hombach et al discloses a polyisocyanate preparation dispersible in water and having an average NCO functionality of about 2.0 to 3.5 which contains (a) an aliphatic polyisocyanate or a mixture of aliphatic polyisocyanates and (b) a quantity of an emulsifier sufficient to ensure the dispersibility of the polyisocyanate (column 2, lines 13-19). Among the applicable aliphatic polyisocyanates listed is the isocyanurate of IPDI, disclosed as particularly preferred (column 2, lines 39-43). Hombach et al further discloses that suitable emulsifiers include reaction products of aliphatic polyisocyanates with nonionic ethylene oxide unit-containing polyether alcohols, wherein the aliphatic polyisocyanates may be any of the aliphatic polyisocyanates disclosed as component (a) therein, as well as other aliphatic diisocyanates (column 4, line 6ff), and wherein the emulsifiers can either be produced in a separate step by reaction of the named starting

materials and then mixed with the polyisocyanate to be converted into an emulsifiable form, or they can be produced *in situ* (column 4, lines 45-49).

It is thus clear that the disclosure in Hombach et al is substantially broader than the presently-claimed invention. In addition, all of the examples of the invention in Hombach et al, i.e., Examples 1-14, are based on the reaction of a particular polyether and a particular polyisocyanate, presumably with an excess of polyisocyanate, such that the final product is a preparation in accordance with Hombach et al's invention in which the emulsifier is formed *in situ* by reaction with the polyisocyanate, as pointed out above. Thus, in all the examples of Hombach et al's invention, the polyisocyanate for component (a) and the polyisocyanate used to make the emulsifier component (b), is the same. Clearly, there is no direction in Hombach et al to employ the isocyanurate of IPDI as their component (a), and the reaction of a polyether with an isocyanurate and/or biuret of HDI as their emulsifier component (b).

Neither Laas et al, Lenz et al, nor Huynh-Ba remedy the above-discussed deficiencies of Hombach et al, since there is no disclosure or suggestion in any of Laas et al, Lenz et al or Huynh-Ba to form an emulsifier based on HDI and excluding IPDI, and to combine this emulsifier with IPDI.

In the Office Action, the Examiner finds that the above-discussed showing of unexpected results is not "commensurate in scope with the prior art and the instant claims." The Examiner further states that comparison of Examples 1 and 2 "would be useful" but then finds that these examples use different molecular weight polyethylene oxides from the examples, which different molecular weight the Examiner finds would "alone will materially affect the properties." The Examiner makes the same findings with regard to Examples 3 and 4. The Examiner further finds that there has been no comparison "with the mixtures of isocyanurates of HMDI [sic] and IPDI in situ emulsified with the ethylene oxides of

[Hombach et al], which the Examiner considers the closest prior art” and that the present examples “are deficient from this perspective also.”

In reply, Applicants note that the hydrophilicized isocyanate a1 in Example 1 is derived from a monofunctional polyethylene oxide with a molecular mass of 500 prepared from methanol. Hydrophilicized isocyanate b1 of Example 2 is derived from an analogous monofunctional polyethylene oxide but having a molecular mass of 1000. However, the difference in molecular mass is irrelevant, because the monofunctional polyethylene oxide used to hydrophilicize isocyanate a1 is the same in Examples 1 and 2. In other words, Examples 1 and 2 use the same hydrophilicized isocyanate a1. As discussed above, the difference between Examples 1 and 2 is the use of isocyanate b1 in either non-hydrophilicized or hydrophilicized form. Thus, Examples 1 and 2 are directly comparable, and are Examples 3 and 4, as discussed above. Moreover, the above-discussed comparisons in the specification herein are deemed to be closer than the particular examples of Hombach et al, discussed above, wherein the same polyisocyanate is used for both the aliphatic polyisocyanate component (a) and the emulsifier component (b). Compare *Ex parte Humber*, 217 USPQ 265 (Bd. Pat. App. & Inter. 1981) (comparative data showing the claimed chlorine-containing compounds to be unexpected over various (non-prior art) chlorine-containing isomers was accepted as more probative over prior art, drawn to non-chlorine containing analogs of the claimed compounds, asserted to be closest) (**copy enclosed**). In addition, in none of the examples in Hombach et al is the polyether derived from methanol. If the Examiner believes that a comparison should be made to Hombach et al, the Examiner is respectfully requested to indicate precisely what embodiment therein should be compared to.

For all the above reasons, it is respectfully requested that the above rejections be withdrawn.

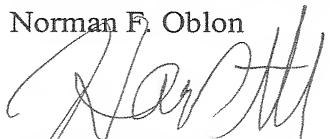
All of the presently-pending claims in this application are now believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 03/06)

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon


Harris A. Pitlick
Registration No. 38,779

NFO:HAP

FULL TEXT OF CASES (USPQ FIRST SERIES)

Ex parte Humber, Bruderlein, and Asselin, 217 USPQ 265 (BdPatApp&Int 1981)

Ex parte Humber, Bruderlein, and Asselin, 217 USPQ 265 (BdPatApp&Int 1981)

Ex parte Humber, Bruderlein, and Asselin

**(BdPatApp&Int)
217 USPQ 265**

Opinion dated Nov. 13, 1981

U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences

Headnotes

PATENTS

1. Patentability — Composition of matter (§ 51.30)

Consistent with In re Holladay, 199 USPQ 516, applicants may show improved results for their claimed compounds in comparison with compounds that are even more closely related than those of prior art relied upon by Examiner in order to rebut prima facie case.

Particular patents — Chlorinated Compounds

Humber, Bruderlein, and Asselin, 13-Chloro-Benzocycloheptapyridoisoquinoline Derivatives and Process Therefor, rejection of claims 1-3 and 5-9 reversed.

Case History and Disposition:

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Appeal from Art Unit 122.

Application for patent of Leslie G. Humber, Francois T. Bruderlein, and Andre A. Asselin, Serial No. 817,660, filed July 21, 1977. From decision rejecting claims 1-3 and 5-9, applicants appeal (Appeal No. 443-29). Reversed.

Attorneys:

John W. Routh, New York, N.Y., for appellant.

Judge:

Before Blech and Goldstein, Examiners-in-Chief, and Seidleck, Acting Examiner-in-Chief.

Opinion Text

Opinion By:

Blech, Examiner-in-Chief.

This is an appeal from the final rejection of claims 1 through 3 and 5 through 9, all the claims remaining in the case.

Representatives of the claimed invention are:

1. A compound of formula 1

Tabular, graphic, or textual material set at this point is not available. Please consult hard copy or call BNA PLUS at 1-800-452-7773 or 202-452-4323.

in which R is lower alkyl selected from the group consisting of straight chain alkyl having up to six carbon atoms and branched chain alkyl having up to four carbon atoms or R is cycloalkyl having 3-6 carbon atoms, or a pharmaceutically acceptable acid addition salt thereof.

5. A method of producing neuroleptic effects in a mammal which comprises administering to said mammal an effective neuroleptic amount of a compound of Claim 1, or a pharmaceutically acceptable salt thereof.

6. A pharmaceutical composition for producing neuroleptic effects in a mammal comprising an effective neuroleptic amount of a compound of Claim 1, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier.

The references cited by the Examiner are:

Table set at this point is not available. See table in hard copy or call BNA PLUS at 1-800-452-7773 or 202-452-4323.

Winthrop et al (Winthrop), J.O.C., 27, pp. 230-240, 1962.

Voith et al (Voith), Psychopharmacologia, 42, pp. 11-20, 1975.

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Humber et al (Humber II), Abstract of Papers, 167th ACS National Meeting, Los Angeles, Calif., March 31-April 5, 1974.

Bruderlein et al (Bruderlein II), J. Med. Chem., Vol. 18, pp. 185-188, 1975.

The appealed claims stand rejected for obviousness under 35 U.S.C. 103. The Examiner considers them to be unpatentable over Voith and Bruderlein II in view of Humber I and Winthrop.

The non-chlorinated analogs of the claimed compounds, specifically also of the preferred species wherein R in the formula above set forth is isopropyl (named "Butaclamol"), are known, as shown by Voith and Bruderlein II. It is the Examiner's position that the claimed 13-Cl substituted derivatives thereof would be prima facie obvious to the artisan in light of the teachings of Humber I and Winthrop and that this presumption of obviousness has not been adequately rebutted by the Declaration evidence

of record.

We cannot subscribe to the Examiner's holding. It is predicated on the assumption that chlorination, in general, is well known in the pharmaceutical art and since related compounds possessing neuroleptic properties are known to be useful in either their non-chlorinated or chlorinated forms that the claimed compounds are thus obvious. Such an assumption manifestly is bottomed on the proposition that the position in the molecule at which the chlorination occurs is inconsequential and of no significance. But such is contraindicated by the very art relied upon by the Examiner, as well as by the Voith Declaration under 37 CFR 1.132. Thus, from the teaching of Winthrop the artisan would favor the 14-Cl substituted compound inasmuch only its precursor is disclosed to have increased activity. The Voith Declaration, however, convincingly demonstrates unexpectedly significant improved results for the 13-chloro vis-a-vis the 9-Cl, 12-Cl and 14-Cl substituted compounds. Such clearly could not have been foreseen and rebuts the Examiner's basic premise of equivalency of chlorination no matter at which position it is effected.

[1] Of course we appreciate and are cognizant of the Examiner's contention that no improved results have been shown for the claimed chlorinated compounds vis-a-vis the non-chlorinated analog butaclamol. However, consistent with the holding by the court in *In re Holladay*, 584 F.2d 384, 199 USPQ 516 (CCPA 1978), appellants may show improved results for their claimed compounds in comparison with compounds which, in fact, are even closer related than those of the prior art relied upon by the Examiner in order to rebut the *prima facie* case. Consequently, the comparative showing vis-a-vis the other chlorinated compounds which are more similar to those claimed than the non-chlorinated derivatives is viable probative evidence which palpably must be held as refuting the presumption of obviousness engendered by the art.

Accordingly, the decision of the Examiner is reversed.

Reversed.

- End of Case -

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